

and *Trogosus castoridens*, really belong to the same genus and species. The tooth of *Anchippodus riparius* was obtained from a tertiary formation, miocene or eocene, in Monmouth Co., N. J. If the determination is correct, it would go to show that the Bridger Tertiary formation of Wyoming was contemporaneous with the Tertiary deposit of Monmouth Co., N. J.

Prof. COPE stated that the largest mammal of the Eocene formations adjoining those of Wyoming, *i. e.* of the Wahsatch group of Hayden, was the *Bathmodon radians*, Cope, of about the size of Rhinocerus. It was an odd-toed ungulate, with peculiar dental characters. The incisors were well developed above and below as in the Tapir, but the dental series was little interrupted. The crowns of the upper molars were all wider than long, and presented mixed characters. On the outer margin one only of the two usual crescents of Ruminants was present, but a tubercle represented the anterior one. The one which was present was directed very obliquely inwards. Inner crescents were represented by two angles, the posterior forming the inner angular margin of a flat table, the anterior, a mere cingulum at its anterior base. The arrangement of these parts was stated to be of interest in connection with the relationships between the types of hoofed animals. The single outer crescent was a ruminant indication, while the inner table resembled the interior part of the crown of *Titanotherium*. It differed, however, in its early union with the outer margin, its edge being thus possibly homologous with the posterior transverse crest in *Rhinocerus*. The premolars had two or three lobes with crescentic section arranged transversely. He regarded the genus as allied to *Chalicotherium*.

He stated that the mammalian fauna of Wyoming and Utah more nearly resembled that of the Paris Basin than any yet discovered in our country, and that it had been discovered to contain a still greater number of generalized mammalian forms. One of the most marked of these was the genus just described by Dr. Leidy.

APRIL 9.

The President, Dr. RUSCHENBERGER, in the chair.

Sixteen members present.

Remarks on some Extinct Vertebrates.—Prof. LEIDY directed attention to some fossils upon which he made the following observations. Several teeth and jaw fragments from the Loup Fork of the Niobrara River, Nebraska, obtained by Prof. Hayden, appear to indicate a large species of *Felis*, not previously described. The most characteristic specimen consists of an upper sectorial molar about as large as that of the Bengal Tiger, and consequently

[June 25,

much too large for either of the largest existing american cats, the Panther and the Jaguar. It is as much too small to have pertained to the American Lion, *Felis atrox*, for its breadth is but slightly greater than that contained in the lower jaw from which the latter was described. Breadth of the crown of the tooth is $15\frac{1}{2}$ lines; its thickness in front 8 lines. The measurements in the corresponding teeth of a Bengal Tiger are, 16 lines in breadth, and $7\frac{1}{2}$ lines in thickness in front. The form of the fossil tooth is the same as in the other feline species.

The extinct species may be named *FELIS AUGUSTUS*.

A distal extremity of a humerus, from the Niobrara River, about the size and construction of the corresponding part in the Bengal Tiger, may belong to this species.

Another fossil, consisting of a detached body of a vertebra, apparently indicates an extinct reptile allied to *Plesiosaurus* and *Discosaurus*. The specimen, recently received from Prof. Hayden, was obtained in 1870, on Henry's Fork of Green River, Wyoming. It is free from attached matrix, and was the only specimen pertaining to the animal which was found. It probably belonged to a formation of earlier date than that of the same locality which has yielded other fossils previously described.

The vertebra is from the base of the tail, and is much shorter in relation to its other dimensions than in *Plesiosaurus* or *Discosaurus*. The extremities are concave, and encircled near the margin of the articular surfaces with a narrow groove. Posteriorly there are two large articular facets, as widely separated as the bone would permit, for the junction of a chevron. Anteriorly there are no marks of chevron attachment. The roots of strong transverse processes or diapophyses project from the sides of the body just above the middle. The neural arch was completely eo-ossified with the body, leaving no trace of its earlier separation.

The breadth of the body is 23 lines; its depth 19 lines, and its length 1 inch.

Viewing the specimen as probably representing a genus different from those mentioned, I propose to name it with the species as *OLIGOSIMUS GRANDÆVUS*.

Another fossil is a remarkable specimen, obtained by Prof. Hayden in the "Black Foot country" at the head of the Missouri River. It looks as if it had formed part of the dermal armor of some huge saurian or perhaps of an armadillo-like animal. It is imperfect, and looks as if it were half broken away. In its present state it is hemiovoid, about two inches in diameter, concave below, and convex above, where it is covered by about fifteen large mammillary bosses.

Accompanying this specimen there is a distal phalanx, which may belong to the same animal. It is rather less than two inches long. The articular surface is transversely elliptical, $1\frac{1}{4}$ inch wide, and 11 lines deep, and feebly depressed, so as to indicate a

1872.]

moderate degree of mobility. The upper surface of the bone slopes to the end and is transversely convex. The extremity is expanded at the borders. Beneath are several vaseular perforations. Though the specimens are not sufficiently characteristic to determine positively whether they belong to a mammal or a reptile, or whether they even belong together to the same animal, the former one is so peculiar that I am disposed to regard it as representing a genus and species, which may be named *TYLOSTEUS ORNATUS*.

Curious habit of a Snake.—Mr. COPE made the following remarks:—

I had for some time a specimen of *Cyclophis æstivus*, received from Fort Macon, N. Ca., through the kindness of Dr. Yarrow, living in a wardian case. The slender form of this snake, and its beautiful green and yellow colors, have led to the opinion that it is of arborcal or bush-loving habits. It never exhibited such in confinement, however, and instead of climbing over the *Caladia*, ferns, etc., lived mostly under ground. It had a curious habit of projecting its head and two or three inches of its body above the ground, and holding them for hours rigidly in a fixed attitude. In this position it resembled very closely a sprout or shoot of some green succulent plant, and might readily be mistaken for such by small animals.

Intelligence in Monkeys.—I have two species of *Cebus* in my study, *C. capucinus*, and a half-grown *C. apella*. The former displays the usual traits of monkey ingenuity. He is an admirable catcher, seldom missing anything, from a large brush to a grain, using two hands or one. His cage door is fastened by two hooks, and these are kept in their places by nails driven in behind them. He generally finds means sooner or later to draw out the nails, unhook the hooks and get free. He then occupies himself in breaking up various objects and examining their interior appearances, no doubt in search of food. To prevent his escape I fastened him by a leather strap to the slats of the cage, but he soon untied the knot, and then relieved himself of the strap by cutting and drawing out the threads which held the flap for the buckle. He then used the strap in a novel way. He was accustomed to catch his food (bread, potatoes, fruit, etc.) with his hands, when thrown to him. Sometimes the pieces fell short three or four feet. One day he seized his strap and began to throw it at the food, retaining his hold of one end. He took pretty correct aim, and finally drew the pieces to within reach of his hand. This performance he constantly repeats, hooking and pulling the articles to him in turns and loops of the strap. Sometimes he loses his hold of the strap. If the poker is handed him, he uses that with some skill, for the recovery of the strap. When this is drawn in, he secures his food as before. Here is an act of

[June 25,

intelligence which must have been originated by some monkey, since no lower or ancestral type of Mammals possess the hands necessary for its accomplishment. Whether originated by Jack, or by some ancestor of the forest who used vines for the same purpose, cannot be readily ascertained.

After a punishment, the animal would only exert himself in this way when not watched; as soon as an eye was directed to him, he would cease. In this he displayed distrust. He also usually exhibited the disposition to accumulate to be quite superior to hunger. Thus he always appropriated all the food within reach before beginning to eat. When different pieces were offered to him, he transferred the first to his hind feet to make room for more; then filled his mouth and hands, and concealed portions behind him. With a large piece in his hands, he would pick the hand of his master clean before using his own, which he was sure of.

APRIL 16.

Mr. VAUX, Vice-President, in the chair.

Twenty-three members present.

The following paper was presented for publication:—

“Studies of the Tyrannidæ. Part I. Revision of the Species of *Myiarchus*.” By ELLIOTT COUES.

APRIL 23.

The President, Dr. RUSCHENBERGER, in the chair.

Twenty-one members present.

The following paper was presented for publication:—

“Catalogue and Synonymy of the Family Lucinidæ.” By GEO. W. TRYON, JR.

Prof. P. FRAZER, JR., noticed a granular sediment at the bottom of several bottles of water from the Geyser Spring, Saratoga, and on taking them out they proved to be phanero-crystalline individuals of peculiar form. This form seemed at first sight to be that of the sphenoid or wedge-shaped hemi-pyramids of one of the tetragonal or rhombic systems. On testing the crystals they proved to be nothing else than carbonate of lime, and the difficulty lay in making their habitus and composition harmonize. Arragonite crystals they certainly were not, and if they were calcites it is evident that they could not be sphenoids.